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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/760,066	01/12/2001	Karl-Heinz Schuster	(Z) 99023 P US	3378

7590 09/30/2003
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EXAMINER

LESTER, EVELYN A

ART UNIT PAPER NUMBER

2873

DATE MAILED: 09/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/760,066

Applicant(s)

SCHUSTER, KARL-HEINZ

Examiner

Evelyn A. Lester

Art Unit

2873

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 May 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-4, 11-18, 20, 21, 25-27 and 29-44 is/are allowed.
- 6) ☒ Claim(s) 5-10, 19, 22 and 28 is/are rejected.
- 7) ☒ Claim(s) 23 and 24 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 7.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: *See Continuation Sheet*.

Continuation of Attachment(s) 6). Other: Attachment A: page copy of spec.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

2. A substitute specification without the claims is required pursuant to 37 CFR 1.125(a) because many of the pages have words that are difficult to read. Please note the attached copy of a sample page (i.e. Attachment A). This copy is an actual representation of the problem. The Examiner is not sure how this happened, but without a substitute specification it will be very difficult to publish this application as a patent.

A substitute specification filed under 37 CFR 1.125(a) must only contain subject matter from the original specification and any previously entered amendment under 37 CFR 1.121. If the substitute specification contains additional subject matter not of record, the substitute specification must be filed under 37 CFR 1.125(b) and (c)

Information Disclosure Statement

3. The information disclosure statement filed on 5-30-03 has been made of record and considered.

Claim R jections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claim 5 is rejected under 35 U.S.C. 102(b) as being clearly anticipated by Sasaya et al (U.S. patent 5,805,344).

Sasaya et al discloses the claimed invention as shown in Figures 3 and 13, and their accompanying text, especially the data table beginning at column 26 to the fifth embodiment, wherein Sasaya et al's projection objective optical system has at least a first waist of a pencil of rays with a lens having an aspheric surface arranged after the first waist.

5. Claims 5, 6 and 10 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Yamaguchi et al (DE 198 18 444 A1).

Please note in Yamaguchi et al at Tables 3A and 3B, as well as pages 13-15; also note Tables 5A and 5B, as well as pages 19-21.

6. Claim 22 is rejected under 35 U.S.C. 102(b) as being clearly anticipated by Araki (U.S. patent 4,948,238).

Art Unit: 2873

Please note Araki's first and fifth embodiments at column 4, line 1 to column 6, line 58, and at column 11, line 30 to column 12, line 49, and especially the data tables in column 4 and column 11.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321© may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Art Unit: 2873

7. Claims 5-10, 19, and 28 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 8-17 and 28 of copending Application No. 09/847,658 (US 2002/0008861 A1). Although the conflicting claims are not identical, they are not patentably distinct from each other because the applications' claimed inventions are obvious variations of each other.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

For example, with respect to claim 5 of the instant invention and specifically claims 8, 15 and 16 of the copending application, each of the applications discloses a projection objective optical system having an aspheric lens surface in relation to the first waist or correspondingly the respective "bulge."

Allowable Subject Matter

8. Claims 1-4, 11-18, 20, 21, 25-27, 29-33 and 33-44 are allowed.

9. Claims 23 and 24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. The following is a statement of reasons for the indication of allowable subject matter:

Art Unit: 2873

The prior art does not show or fairly suggest the claimed invention and claimed subject matter of a projection objective for microlithography and a refractive microlithographic projection objective having the claimed structure and claimed limitations, wherein a rejection under 35 USC 102 or 103 would be improper. Please particularly note the combination of claimed elements and claimed limitations, including as recited in claim 1, wherein the fourth lens group consists of only spherical lens elements and with respect to claims 23 and 24, the specific vertex radius range for all aspheric lens elements. With respect to all other claims, please note the reasons for allowance given in paper #5. Therefore, in light of the Applicants' arguments and/or amendments, the claimed invention is considered to be in condition for allowance as being novel and nonobvious over the prior art.

Response to Arguments

11. Applicant's arguments filed 5-30-03 have been fully considered but they are not persuasive.

With respect to claims 5 and 22, in response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e. the six lens group arrangement) are not recited in the rejected claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

With respect to the obviousness-type double patenting rejection, though the Applicant stated that a Terminal Disclaimer was enclosed with their response on

Art Unit: 2873

5-30-03, no such Terminal Disclaimer was found. Therefore, the rejection has been maintained.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Shigematsu (U.S. patent 6,259,508 B1) teaches a projection optical system having a beam waist and aspheric lenses.

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Evelyn A. Lester whose telephone number is (703) 308-

Art Unit: 2873

4943. The examiner can normally be reached Monday through Friday, 10am to 6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Y. Epps can be reached on (703) 308-4883. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.


Evelyn A. Lester
Primary Examiner
Art Unit 2873

Projection Objection for Microlithography**Cross References to Related Applications**

This application is a continuation application of PCT/EP99/10233, which is pending.

German Applications DE 198 55 108A, DE 198 55 157A, and DE 198 55 158A, in which

5 the Applicant participated, are incorporated herein by reference.

Statement Regarding Federal Sponsored Research or Development – Not Applicable.

Reference to a Microfiche Appendix – Not Applicable.

Background of the Invention**Technical Field**

The invention relates to a projection objective with a lens arrangement, which can be divided into six lens groups. The first, third, fifth and sixth lens groups have positive power and the second and fourth lens groups respectively have negative power. The division of the lens system into lens groups is described in more detail hereinafter, based on the direction of propagation of the radiation.

The first lens group is positive and ends with a lens of positive power. A bulge is formed by the first lens group; it is unimportant if negative lenses are also arranged in the bulge.

The second lens group is of negative total power. This second lens group has as its first lens a lens having a concave lens surface toward the image. This second lens group substantially describes a waist. Here, also it is not of substantial importance if a few positive lenses are
20 included in the second lens group, as long as the waist is maintained.

The third lens group begins with a lens having negative power and a convex lens surface on the image side, and which can be a meniscus. If a thick meniscus lens is provided as the first lens, the separation of the lens groups can be considered to be within the lens.

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